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CLAIMS:

1. MEMS switch having a bent switching element, comprising

a signal conductor (12), which is arranged on a substrate,

an oblong-shaped switching element (13), which has a bent elastic bending area (131, 132) and is fastened in a cantilevered manner on the substrate (11), and

an electrode arrangement (14a, 14b) for generating an electrostatic force acting upon the switching element (13) in order to bend the switching element (13) toward the signal conductor (12),

characterized in that the switching element (13) has at least two switching arms (13a, 13b) having a bent elastic bending area (131, 132), which are arranged on both sides of the signal conductor (12) parallel thereto and are mutually connected at a free end by a bridge (15) positioned over the signal conductor (12),

the switching arms (13a, 13b) being further developed such that the respective elastic bending area (131, 132) under the effect of the electrostatic force progressively approaches the electrode arrangement (14a, 14b) in a direction parallel to the signal conductor (12).

2. High-frequency MEMS switch according to Claim 1, characterized in that the bridge (15) forms a contact area.

3. High-frequency MEMS switch according to Claim 1 or 2, characterized in that the electrode arrangement (14a, 14b) is formed by at least one ground electrode which is arranged under the switching element flatly on the substrate (11) in order to electrostatically attracting the switching element.

4. High-frequency MEMS switch according to Claim 1 or 2, characterized in that the electrode arrangement is formed by a ground electrode arranged below the substrate (11) or by the substrate itself.

5. High-frequency MEMS switch according to one of the preceding claims,
characterized in that the electrode arrangement (14a, 14b) extends parallel to the substrate surface in order to pull the switching element (13) by the electrostatic force in its bending area (131, 132) progressively toward the substrate surface.

6. High-frequency MEMS switch according to one of the preceding claims,
characterized in that the bent bending area (131, 132) is formed by bimorphic material.

7. High-frequency MEMS switch according to one of the preceding claims,
characterized in that the bending area (131, 132) has a surface melted-on by laser heating for generating a tensile stress.

8. High-frequency MEMS switch according to one of the preceding claims,
characterized in that the switching element (13) is produced by thin-film technology.

9. High-frequency MEMS switch according to one of the preceding claims,
characterized that, under the effect of the electrostatic force, the contact area (16) comes in direct contact with the signal conductor (12).

10. High-frequency MEMS switch according to one of Claims 1 to 8,
characterized in that, under the effect of the electrostatic force, the contact area (15) takes up a minimal distance from the signal conductor (12).

11. Method of producing a high-frequency MEMS switch having a bent switching element by

constructing a signal conductor (12) on a substrate (11),

constructing an electrode arrangement (14a, 14b) on the substrate (11),

forming an oblong switching element (13) having a bent elastic bending area (131, 132) on the substrate (11) such that, in the bending area (131, 132), it is pulled by the electrode arrangement (14a, 14b) by an electrostatic force lengthwise toward the substrate (11) and, by an elastic restoring force, in the bending area (131, 132), moves away from the substrate (11), characterized in that the switching element (13) comprises at least two switching arms (13a, 13b) having a bent elastic bending area (131, 132) which are arranged on both sides of the signal conductor (12) parallel thereto and are mutually connected at a free end by a bridge (15) positioned over the signal conductor (12),

the switching arms (13a, 13b) being further developed such that, under the effect of the electrostatic force, the respective elastic bending area (131, 132) progressively approaches the electrode arrangement (14a, 14b) in a direction parallel to the signal conductor (12).

12. Method according to Claim 11, characterized in that the bridge (15) is constructed as a contact area.

13. Method according to one of Claims 11 to 12, characterized in that at least one ground electrode arranged below the substrate (1) is formed as the electrode arrangement (forms the....? translator).

14. Method according to one of Claims 11 to 13, characterized in that the surface of the bending area (131, 132) is melted on by means of laser heating for generating a tensile stress.

15. Method according to one of Claims 11 to 14, characterized in that it is used for producing a high-frequency MEMS switch according to one of Claims 1 to 10.

16. Method according to one of Claims 11 to 15, characterized in that the electrode arrangement (14a, 14b) is formed by one or more intrinsically conducting substrate areas or by one intrinsically conducting substrate.